

1. Design a class `matrix`

```
class matrix
{
private:
    double** a; // pointer to a square matrix
    int n;      // dimension of the matrix
public:
    // default constructor, sets a = 0; n = 0;
    matrix();

    // constructor, allocates dynamically memory for the matrix
    matrix( int nn );

    // destructor, frees the memory
    ~matrix();

    // returns the pointer to the ith row
    double* operator[]( int i );

    // copies elements of b to a, returns *this
    matrix& operator=( double** b );

    // makes of copy of m, returns *this
    matrix& operator=( matrix& m );

    // prints elements
    void show();
};
```

Test the objects of a `matrix`-class with a suitable main program.